

CLAIMS:

1. A method of performing packet switched handover in a mobile communication network, comprising a mobile node, a first and a second packet switching node, the method comprising:

detecting a handover condition associated with said mobile node in said first packet switching node;

requesting handover preparation by said first packet switching node from said second packet switching node;

receiving logical link layer information from said first packet switching node to said second packet switching node;

setting a state in a logical link layer entity in said second packet switching node based on said logical link layer state information; and

sending logical link layer frames from said first and second packet switching nodes to said mobile node during the handover.

2. The method according to claim 1, further comprising:

utilizing a General Packet Radio Service (GPRS) network as said mobile communication network, Serving GPRS Support Nodes (SGSN) as said first and second packet switching nodes, and GPRS Logical Link Control (LLC) as said logical link layer.

3. A method of performing packet switched handover in a mobile communication network comprising a mobile node, a first and a second packet switching node, the method comprising:

detecting a handover condition associated with said mobile node in said first packet switching node;

requesting handover preparation by said first packet switching node from said second packet switching node;

receiving a packet at said first packet switching node;

forming a logical link layer Protocol Data Unit (PDU) from data in said packet;

sending a first frame containing said logical link layer Protocol Data Unit (PDU) to said mobile node from said first packet switching node;

sending said logical link Protocol data Unit (PDU) from said first packet switching node to said second packet switching node; and

sending a second frame containing said logical link layer Protocol Data Unit (PDU) to said mobile node from said second packet switching node.

4. The method according to claim 3, further comprising the step of:

utilizing a General Packet Radio Service (GPRS) network as said mobile communication network, Serving GPRS Support Nodes (SGSN) as said first and second packet switching nodes, and GPRS Logical Link Control (LLC) as said logical link layer.

5. The method according to claim 3, further comprising:

utilizing a General Packet Radio Service (GPRS) network as said mobile communication network, a Serving GPRS Support Node (SGSN) as said first packet switching node, a Base Station Subsystem (BSS) node as said second packet switching node, and GPRS Logical Link Control (LLC) as said logical link layer.

6. A method of performing packet switched handover in a mobile communication network comprising a mobile node, a first and a second packet switching node, the method comprising:

detecting a handover condition associated with said mobile node in said first packet switching node;

requesting handover preparation by said first packet switching node from said second packet switching node;

receiving at least one ciphering parameter from said first packet switching node to said second packet switching node;

performing a logical link parameter exchange between said mobile node and said first packet switching node; and

sending logical link layer frames from said first and second packet switching nodes to said mobile node during handover.

7. The method according to claim 6, wherein, in said performing step, said logical link parameter exchange is performed in response to a condition where said mobile node receives a logical link layer frame, which has a duplicate flag set.

8. The method according to claim 6, further comprising:

utilizing a General Packet Radio Service (GPRS) network as said mobile communication network, Serving GPRS Support Nodes (SGSN) as said first and second packet switching nodes, GPRS Logical Link Control (LLC) as said logical link layer, and Logical Link Control (LLC) eXchange Identification (XID) negotiation as said logical link parameter exchange.

9. A method of performing packet switched handover in a mobile communication network, comprising a mobile node, a first and a second packet switching node, the method comprising:

forming a first logical link layer entity in said mobile node;

detecting a handover condition in said mobile node;

forming a second logical link layer entity in said mobile node;

sending logical link layer frames from said first and second packet switching nodes to said mobile node during handover;

detecting handover completion; and

renegotiating logical link layer parameters between said mobile node and said second packet switching node after said detecting of said handover completion when the logical link layer parameters are not suitable.

10. The method according to claim 9, further comprising:

removing said first logical link layer entity in said mobile node after said detecting of handover completion.

11. The method according to claim 9, further comprising:

utilizing a General Packet Radio Service (GPRS) network as said mobile communication network, Serving GPRS Support Nodes (SGSN) as said first and second packet switching nodes, and GPRS Logical Link Control (LLC) as said logical link layer.

12. A system comprising a mobile node, a first and a second packet switching node, the system further comprising:

first signaling means in said first packet switching node for detecting a handover condition associated with said mobile node, requesting handover preparation from said second packet switching node and sending logical link layer information to said second packet switching node;

second signaling means in said second packet switching node for receiving logical link layer information from said first packet switching node;

first control means in said second packet switching node arranged for setting the state in a logical link layer entity based on logical link layer information from said first packet switching node; and

second control means in said first packet switching node arranged for sending logical link layer frames to said mobile node during handover.

13. A system comprising a mobile node, a first and a second packet switching node, the system further comprising:

signaling means in said first packet switching node for detecting a handover condition associated with said mobile node and requesting handover preparation from said second packet switching node;

first logical link layer means in said first packet switching node for forming logical link layer Protocol Data Units (PDU) and sending said logical link layer Protocol Data Units (PDU) to said second packet switching node; and

second logical link layer means in said second packet switching node for sending said logical link layer Protocol Data Units (PDU) transparently to said mobile node.

14. A system comprising a mobile node, a first and a second packet switching node, the system further comprising:

first signaling means in said first packet switching node for detecting a handover condition associated with said mobile node, requesting handover preparation from said second packet switching node and sending at least one ciphering parameter to said second packet switching node;

second signaling means in said second packet switching node for receiving at least one ciphering parameter from said first packet switching node; and

logical link layer means in said first packet switching node for performing a logical link parameter exchange with said mobile node.

15. A system comprising a mobile node, a first and a second packet switching node, the system further comprising:

control means in said mobile node arranged for forming a first logical link layer entity in response

to connection establishment and a second logical link layer entity in response to a handover condition;

signaling means in said mobile node for detecting the handover condition and a handover completion; and

logical link layer means in said mobile node arranged for renegotiating logical link layer parameters with said second packet switched node after the handover completion when the logical link layer parameters are not suitable.

16. A system comprising a mobile node, a first and a second packet switching node, the system further comprising:

a transceiver in said first packet switching node for detecting a handover condition associated with said mobile node, requesting handover preparation from said second packet switching node and sending logical link layer information to said second packet switching node;

a receiver in said second packet switching node for receiving logical link layer information from said first packet switching node;

a first controller in said second packet switching node arranged to set the state in a logical link layer entity based on logical link layer information from said first packet switching node; and

a second controller in said first packet switching node arranged to send logical link layer frames to said mobile node during handover.

17. A system comprising a mobile node, a first and a second packet switching node, the system further comprising:

a transceiver in said first packet switching node for detecting a handover condition associated with said mobile node and requesting handover preparation from said second packet switching node;

a first logical link layer in said first packet switching node for forming logical link layer Protocol

Data Units (PDU) and sending said logical link layer Protocol Data Units (PDU) to said second packet switching node; and

second logical link layer in said second packet switching node for sending said logical link layer Protocol Data Units (PDU) transparently to said mobile node.

18. A system comprising a mobile node, a first and a second packet switching node, the system further comprising:

a transceiver in said first packet switching node for detecting a handover condition associated with said mobile node, requesting handover preparation from said second packet switching node and sending at least one ciphering parameter to said second packet switching node;

a receiver in said second packet switching node for receiving at least one ciphering parameter from said first packet switching node; and

a logical link layer in said first packet switching node for performing a logical link parameter exchange with said mobile node.

19. A system comprising a mobile node, a first and a second packet switching node, the system further comprising:

a controller in said mobile node arranged to form a first logical link layer entity in response to connection establishment and a second logical link layer entity in response to a handover condition;

a detector in said mobile node for detecting the handover condition and a handover completion; and

a logical link layer in said mobile node arranged to renegotiate logical link layer parameters with said second packet switched node after the handover completion when the logical link layer parameters are not suitable.